

A numerical summation of the columns of the above table gives the following:

	Whole number of species.	Straits of Flor- ida, &c.	Southern New England, 1- 30 fathoms.	Northern New England, &c.	Greenland.	Northern Eu- rope, &c.	Mediterranean.
Brachyura	9	4	2	3	1	1	.....
Anomura	10	1?	1	3	1	2	2
Macrura	13	.....	1	3	1	3	.....
Schizopoda	4	.....	.....	2	2	3	.....
Cumacea	1	.....	1	1	.....	.....	.....
Stomatopoda	1	.....	.....	.....	.....	.....	.....
Amphipoda	7	.....	3	6	2	5	1?
Isopoda	5	.....	.....	5	1	1	.....
Total	50	5	8	23	8	15	3

In addition to the above facts in regard to the distribution of the species, it should be added that two of the species, *Lyreidus Bairdii* and *Nephropsis aculeata*, belong to genera heretofore known only from the Pacific region, and each represented there by a single species only; while a third species, *Lysiosquilla armata*, has its nearest known ally in a species known only from the same region.

Of the fifty species enumerated, fourteen are described as new and three others are indicated as probably new; forty-three are here first recorded as belonging to the New England fauna south of Cape Cod; twenty-eight are new to the whole fauna from Cape Hatteras to Northern Labrador; and twenty-one are new to America, including Greenland. Of the forty-three species new to the Southern New England fauna, fifteen are now known also from the New England fauna north of Cape Cod; and of the remaining twenty-eight, four were already known from the Straits of Florida, three from Greenland and Northern Europe, and two from the Mediterranean.

NEW HAVEN, CONN., November 12, 1880.

LIST OF THE FISHES OF THE PACIFIC COAST OF THE UNITED STATES, WITH A TABLE SHOWING THE DISTRIBUTION OF THE SPECIES.

By DAVID S. JORDAN and CHARLES H. GILBERT.

The writers have been engaged during most of the present year (1880) in making investigations of the fish and fisheries of the Pacific coast of the United States, in the interest of the United States Fish Commission and the United States Census Bureau. Extensive collections have been made at each of the principal fishing ports from New Westminster to San Diego.

In the present paper a catalogue is given of the species now known to inhabit the Pacific Ocean between the mouth of Fraser's River on the north and San Diego on the south. The names of the species not

seen by the writers are placed in italics. A vertical column is given for each of the principal localities, and a cross in any column opposite the name of a species indicates that we have obtained or examined, while in the field, specimens from the locality in question. In the last column, S. indicates a general southern distribution, most usually from Point Concepcion or Monterey to Magdalena Bay or Cape San Lucas; N. indicates a general northern distribution, usually from Monterey or Cape Mendocino to Sitka, or beyond; C. indicates the distinctively Californian fauna, the abundance being usually greatest about Monterey and San Francisco. This fauna is chiefly composed of the two viviparous families *Scorpenidae* and *Embiotocidae*.

It will be noticed that the number of species obtained in Monterey Bay and about San Francisco is considerably greater than at any other points. This is partly due to the fact that these regions have more extensive fisheries than others. There is no doubt, however, that more species of fishes really occur from Monterey to Point Reyes than elsewhere on the coast. Monterey Bay is the common meeting ground of the semi-tropical and semi-arctic fish faunæ. There is nowhere an abrupt change along the coast. The three capes, Flattery, Mendocino, and Point Concepcion, are to some extent points of division.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
1. <i>Mola rotunda</i> Cuvier	+			+		+	+		S.
2. <i>Diodon maculatus</i> Lac								+	S.
3. <i>Tetrodon politus</i> Ayres								+	S.
4. <i>Hippocampus ingens</i> Grd								+	S.
5. <i>Siphostoma punctipinne</i> (Gill) J. & G									S.
6. <i>Siphostoma leptorhynchus</i> * (Grd.) Gill								+	S.
7. <i>Siphostoma dimidiatum</i> Gill						+	+	+	S.
8. <i>Siphostoma californiense</i> † (Storer) Gill	+		+	+	+	+			C.
9. <i>Aulorhynchus flavidus</i> Gill	+			+					N.
10. <i>Gasterosteus (aculeatus) serratus</i> Ayres.....	+		+						N.
11. <i>Gasterosteus microcephalus</i> Grd	+		+	+			+		C.
12. <i>Aphoristia atricauda</i> J. & G								+	S.
13. <i>Pleuronichthys verticalis</i> J. & G			+	+					C.
14. <i>Pleuronichthys decurrens</i> ‡ J. & G			+	+					C.
15. <i>Pleuronichthys cenosus</i> Grd	+		+	+	+	+	+	+	N.
16. <i>Hypopsetta guttulata</i> (Grd.) Gill			+	+	+	+	+	+	S.
17. <i>Cynoglossus pacificus</i> Lock	+		+	+					N.
18. <i>Glyptocephalus zachirus</i> Lock			+	+					C.
19. <i>Pleuronectes stellatus</i> Pallas	+	+	+	+	+				N.
20. <i>Lepidopsetta bilineata</i> § (Ayres) Gill	+		+	+					N.
21. <i>Parophrys ischyurus</i> J. & G	+								N.
22. <i>Parophrys isolepis</i> (Lock.) J. & G	+		+						N.
23. <i>Parophrys retulus</i> Grd	+		+	+		+			N.
24. <i>Citharichthys sordidus</i> (Grd.) Gthr.....	+		+	+	+	+	+	+	N.
25. <i>Psettichthys melanostictus</i> Grd	+		+	+					C.

* *Syngnathus arandinae* Grd.

† *Syngnathus griseolineatus* Ayres.

‡ Nom. sp. nov. = *Pleuronichthys quadrituberculatus* J. & G. Proc. U. S. Nat. Mus. 1880, iii, 50 non

Pleuronectes quadrituberculatus Pallas.

§ *Pleuronectes perarcanus* Cope.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
26. Hippoglossoides exilis J. & G.	+		+	+					C.
27. Hippoglossoides classodon J. & G.	+								N.
28. Hippoglossoides jordani Lock	+		+	+					C.
29. Paralichthys maculosus Grd.			+	+	+	+	+	+	S.
30. Xystreurus liolepis J. & G.						+			S.
31. Hippoglossus vulgaris Flem.	+		+				+		N.
32. Atheresthes stomias J. & G.			+						N.
33. Merluccius productus (Ayres) Gill	+		+	+		+			N.
34. Pollachius chalcogrammus* (Pallas) J. & G.	+			+					N.
35. Gadus morrhua L.	+								N.
36. Microgadus proximus (Grd.) Gill	+		+	+					N.
37. Brosmophycis marginatus (Ayres) Gill			+						C.
38. Ophidium taylori Grd.			+	+		+			C.
39. Scytalina cerdale J. & G.	+								N.
40. Lycodopsis paucidens (Lock.) Gill			+						C.
41. Lycodopsis pacificus Collett	+		+						N.
42. Anarrhichthys ocellatus Ayres	+		+	+					N.
43. Lumpenus anguillaris (Pallas) Gill	+								N.
44. Xiphister rupestris J. & G.	+			+					N.
45. Xiphister mucosus† (Grd.) Jor.	+		+						N.
46. Xiphister chinus J. & G.	+			+					N.
47. Cebedichthys violaceus Grd.			+	+	+				C.
48. Anoplarchus alectrolophus‡ (Pallas) J. & G.	+		+	+					N.
49. Apodichthys flavidus Grd.	+		+	+					N.
50. Apodichthys tucorum J. & G.	+		+	+					C.
51. Muraenoides ornatus (Grd.) Gill	+								N.
52. Muraenoides latus (Cope) Gill	+		+						N.
53. Cremonobates integripinnis Rosa Smith								+	S.
54. Gibbonsia elegans Cooper				+		+		+	S.
55. Heterostichus rostratus Grd.				+	+	+	+	+	S.
56. Neoclinus blanchardi Grd.				+	+	+			S.
57. Neoclinus satiricus Grd.				+					S.
58. Hypleurochilus gentilis (Grd.) Gill						+		+	S.
59. Porichthys porosissimus (Cuv. & Val.) Gthr.	+		+	+	+	+	+	+	C.
60. Gobiesox reticulatus Grd.	+		+	+					N.
61. Eumicrotremus orbis (Gthr.) Gill									N.
62. Neoliparis mucosus (Ayres) Steind.			+	+					N.
63. Liparis cyclopus Gthr.									N.
64. Liparis pulchellus Ayres			+	+					N.
65. Aspidophoroides inermis Gthr.									N.
66. Brachyopsis verrucosus Lock			+						C.
67. Brachyopsis xyosternus J. & G.			+	+					C.
68. Podothecus acipenserinus (Pallas) Gill	+								C.
69. Podothecus vulsus J. & G.			+						C.
70. Podothecus trispinosus (Lock.) J. & G.						+			C.
71. Bothragonus swani (Steind.) Gill									N.
72. Prionotus stephanophrys Lock			+						S.
73. Ascelichthys rhodorus J. & G.	+								N.
74. Psychrolutes paradoxus Gthr.									N.
75. Cottus polyacanthocephalus Pallas	+								N.
76. Artedius lateralis Grd.	+		+	+					N.
77. Artedius notospilotus Grd.	+		+		+	+			C.
78. Artedius quadriscutatus Lock			+						C.
79. Artedius pugettensis Steind.	+		+						C.
80. Hemilepidotus spinosus Ayres			+	+					C.
81. Hemilepidotus gibbsi Gill	+		+						N.
82. Aspicottus bison Grd.	+		+						N.
83. Scorpenichthys marmoratus Grd.	+		+	+	+	+		+	C.

* Gadus periscopus Cope.

† Gadus auratus Cope; *Gadus morrhua* L. (fide Bean.) = *G. macrocephalus* Tiles.

‡ Xiphidium crureum Cope.

§ Opidium atropurpureum Kittlitz = *Anoplarchus crista-galli* Gthr.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
84. <i>Leptocottus armatus</i> Grd.	+	+	+	+	+	+	+	+	C.
85. <i>Liocottus hirundo</i> Girard	+	+	+	+	+	+	+	+	S.
86. <i>Oligocottus globiceps</i> Grd.	+	+	+	+	+	+	+	+	N.
87. <i>Oligocottus maculosus</i> Grd.	+	+	+	+	+	+	+	+	N.
88. <i>Oligocottus analis</i> Grd.	+	+	+	+	+	+	+	+	S.
89. <i>Blepsias cirrhosus</i> (Pallas) Gthr.	+	+	+	+	+	+	+	+	N.
90. <i>Nautichthys oculofasciatus</i> Grd.	+	+	+	+	+	+	+	+	N.
91. <i>Scorpena guttata</i> Grd.	+	+	+	+	+	+	+	+	S.
92. <i>Sebastichthys nigrocinctus</i> (Ayres) Gill	+	+	+	+	+	+	+	+	N.
93. <i>Sebastichthys serripes</i> J. & G.	+	+	+	+	+	+	+	+	S.
94. <i>Sebastichthys nebulosus</i> (Ayres) Gill	+	+	+	+	+	+	+	+	N.
95. <i>Sebastichthys chrysomelas</i> J. & G.	+	+	+	+	+	+	+	+	C.
96. <i>Sebastichthys carnatius</i> J. & G.	+	+	+	+	+	+	+	+	C.
97. <i>Sebastichthys maliger</i> J. & G.	+	+	+	+	+	+	+	+	N.
98. <i>Sebastichthys caurinus</i> (Rich.) J. & G. var. <i>vexillaris</i> J. & G.	+	+	+	+	+	+	+	+	N.
99. <i>Sebastichthys rastrelliger</i> J. & G.	+	+	+	+	+	+	+	+	S.
100. <i>Sebastichthys auriculatus</i> (Grd.) Gill.	+	+	+	+	+	+	+	+	S.
101. <i>Sebastichthys rubrivinctus</i> J. & G.	+	+	+	+	+	+	+	+	S.
102. <i>Sebastichthys chlorostictus</i> J. & G.	+	+	+	+	+	+	+	+	C.
103. <i>Sebastichthys rhodochloris</i> J. & G.	+	+	+	+	+	+	+	+	C.
104. <i>Sebastichthys rosaceus</i> (Grd.) Lock	+	+	+	+	+	+	+	+	C.
105. <i>Sebastichthys constellatus</i> J. & G.	+	+	+	+	+	+	+	+	C.
106. <i>Sebastichthys ruber</i> (Ayres) Lock.	+	+	+	+	+	+	+	+	N.
107. <i>Sebastichthys miniatus</i> J. & G.	+	+	+	+	+	+	+	+	C.
108. <i>Sebastichthys pinniger</i> (Gill) Lock.	+	+	+	+	+	+	+	+	N.
109. <i>Sebastichthys atrovirens</i> J. & G.	+	+	+	+	+	+	+	+	S.
110. <i>Sebastichthys elongatus</i> (Ayres) Gill.	+	+	+	+	+	+	+	+	C.
111. <i>Sebastichthys proriger</i> J. & G.	+	+	+	+	+	+	+	+	C.
112. <i>Sebastichthys ovalis</i> (Ayres) Lock.	+	+	+	+	+	+	+	+	C.
113. <i>Sebastichthys entomelas</i> J. & G.	+	+	+	+	+	+	+	+	C.
114. <i>Sebastichthys mystinus</i> J. & G.	+	+	+	+	+	+	+	+	C.
115. <i>Sebastichthys melanops</i> (Grd.) J. & G.	+	+	+	+	+	+	+	+	N.
116. <i>Sebastichthys flavidus</i> (Ayres) Lock.	+	+	+	+	+	+	+	+	C.
117. <i>Sebastes paucispinis</i> (Ayres) Gill.	+	+	+	+	+	+	+	+	C.
118. <i>Hexagrammus asper</i> † Steller	+	+	+	+	+	+	+	+	N.
119. <i>Hexagrammus superciliosus</i> § (Pallas) J. & G.	+	+	+	+	+	+	+	+	N.
120. <i>Hexagrammus decagrammus</i>|| (Pallas) J. & G.	+	+	+	+	+	+	+	+	N.
121. <i>Hexagrammus nebulosus</i> (Grd.) J. & G.	+	+	+	+	+	+	+	+	N.
122. <i>Ophiodon elongatus</i> Grd.	+	+	+	+	+	+	+	+	N.
123. <i>Zanlepis latipinnis</i> Grd.	+	+	+	+	+	+	+	+	N.
124. <i>Oxylebius pictus</i> Gill.	+	+	+	+	+	+	+	+	N.
125. <i>Myriolepis zonifer</i> Lock.	+	+	+	+	+	+	+	+	C.
126. <i>Anoplopoma fimbria</i> (Pallas) Gill.	+	+	+	+	+	+	+	+	N.
127. <i>Gobius glaucifrons</i> (Gill) J. & G.	+	+	+	+	+	+	+	+	N.
128. <i>Lepidogobius gracilis</i> (Grd.) Gill.	+	+	+	+	+	+	+	+	C.
129. <i>Lepidogobius newberryi</i> (Grd.) Gill.	+	+	+	+	+	+	+	+	C.
130. <i>Gillichthys mirabilis</i> Cooper.	+	+	+	+	+	+	+	+	S.
131. <i>Crystallogobius eos</i> Rosa Smith Mss.	+	+	+	+	+	+	+	+	S.
132. <i>Trichodon stelleri</i> Cuv. & Val.	+	+	+	+	+	+	+	+	N.
133. <i>Caulolatilus anomalus</i> (Cooper) Gill.	+	+	+	+	+	+	+	+	S.
134. <i>Bathymaster signatus</i> Cope.	+	+	+	+	+	+	+	+	N.
135. <i>Ichthys lockingtoni</i> J. & G.	+	+	+	+	+	+	+	+	N.
136. <i>Icesteus enigmaticus</i> Lock.	+	+	+	+	+	+	+	+	N.
137. <i>Trachipterus</i> ¶ ?altivelis Kner.	+	+	+	+	+	+	+	+	N.
138. <i>Hypsypops rubicundus</i> (Grd.) Gill.	+	+	+	+	+	+	+	+	S.
139. <i>Chromis punctipinnis</i> Cooper.	+	+	+	+	+	+	+	+	S.
140. <i>Pseudojulis modestus</i> (Grd.) Gthr.	+	+	+	+	+	+	+	+	S.
141. <i>Platyglossus semicinctus</i> (Ayres) Gthr.	+	+	+	+	+	+	+	+	S.
142. <i>Pimelometopon pulcher</i> (Ayres) Gill.	+	+	+	+	+	+	+	+	S.

* Nom. sp. nov.—*Sebastes melanops* Ayres, non *Sebastes melanops* Grd.† *Sebastes similans* Gill.‡ *Chirus trigrammus* Cope.§ *Chirus pictus* Grd.; *Chirus balias* Cope.|| *Chirus guttatus* Grd. (♀); *Chirus constellatus* Grd. (♂); *Chirus maculoseriatus* Lock. (♀).

¶ Taken at Santa Cruz by Dr. C. L. Anderson, and at Cape Flattery by James G. Swan.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
143. <i>Abeona minima</i> (Gibbons) Gill			+	+	+	+		+	C.
144. <i>Abeona aurora</i> J. & G			+	+	+	+		+	C.
145. <i>Cymatogaster aggregatus</i> Gibbons	+		+	+	+	+	+	+	C.
146. <i>Brachystius frenatus</i> Gill	+		+	+		+	+		C.
147. <i>Brachystius rosaceus</i> J. & G			+						C.
148. <i>Holconotus analis</i> (A. Agassiz) J. & G			+	+	+				C.
149. <i>Holconotus argenteus</i> (Gibbons) J. & G			+	+	+	+	+	+	C.
150. <i>Holconotus agassizi</i> (Gill) J. & G			+	+	+	+			C.
151. <i>Holconotus rhodoterus</i> Ag.			+	+	+	+			C.
152. <i>Amphistichus argenteus</i> Ag.			+	+	+	+	+	+	C.
153. <i>Hypsirus caryi</i> (L. Agass.) A. Agass			+	+	+	+			C.
154. <i>Ditrema</i> * <i>jacksoni</i> (Agass.) Günther	+		+	+	+	+	+	+	C.
155. <i>Ditrema laterale</i> (Agass.) Günther	+		+	+	+	+			N.
156. <i>Ditrema atripes</i> J. & G			+	+					C.
157. <i>Ditrema furcatum</i> (Grd.) Gthr			+	+	+	+	+	+	C.
158. <i>Damalichthys argyrosomus</i> (Grd.) J. & G	+		+	+	+	+	+	+	N.
159. <i>Rhacochilus toxotes</i> Agass			+	+		+	+		C.
160. <i>Parhiphippus faber</i> † (Bloch) Gill									S.
161. <i>Genyonemus lineatus</i> (Ayres) Gill			+	+	+	+	+		C.
162. <i>Corvina saturna</i> (Grd.) Gthr					+	+	+	+	S.
163. <i>Roncador stearnsi</i> (Steind.) J. & G					+	+	+	+	S.
164. <i>Umbrina xanti</i> † Gill					+	+	+	+	S.
165. <i>Menticirrhus undulatus</i> § (Grd.) Gill					+	+	+	+	S.
166. <i>Cynoscion nobilis</i> (Ayres)¶ J. & G			+	+	+	+	+	+	S.
167. <i>Cynoscion parvipinnis</i> ¶ Ayres					+	+	+	+	S.
168. <i>Seriphus politus</i> Ayres			+	+	+	+	+	+	S.
169. <i>Girella nigricans</i> (Ayres) Gill				+		+	+	+	S.
170. <i>Scorpius californicus</i> Steind.						+	+	+	S.
171. <i>Xenichthys californiensis</i> Steind.							+	+	S.
172. <i>Pristipoma davidsoni</i> Steind.							+	+	S.
173. <i>Stereolepis gigas</i> Ayres				+		+		+	S.
174. <i>Serranus clathratus</i> (Grd.) Steind				+		+	+	+	S.
175. <i>Serranus nebulifer</i> (Grd.) Steind.				+			+	+	S.
176. <i>Serranus maculofasciatus</i> Steind.							+	+	S.
177. <i>Stromateus simillimus</i> (Ayres) Gill	+		+	+	+	+		+	C.
178. <i>Trachurus saurus</i> Raf				+		+	+		S.
179. <i>Caranx caballus</i> Gthr									S.
180. <i>Seriola lalandi</i> ** Cuv. & Val.						+	+	+	S.
181. <i>Oreynus alalongati</i> (Gmel.) Risso				+		+	+		S.
182. <i>Sarda chilensis</i> †† (C. & V.) J. & G				+		+	+	+	S.
183. <i>Scomberomorus concolor</i> §§ (Lock.) J. & G				+					S.
184. <i>Scomber pneumatophorus</i>||| De la Roche				+					S.
185. <i>Xiphias gladius</i> L							+		S.
186. <i>Remora jacobaea</i> (Lowe) Gill			+						S.
187. <i>Echeneis naucrates</i> L			+						S.
188. <i>Ammodytes</i> (tobianus) <i>personatus</i> Grd	+			+					N.
189. <i>Sphyræna argentea</i> Grd			+	+		+	+	+	S.
190. <i>Atherinopsis californiensis</i> (Grd.) Gill			+	+	+	+	+	+	C.
191. <i>Atherinops affinis</i> (Ayres) Steind			+	+	+	+	+	+	C.
192. <i>Leuresthes tenuis</i> (Ayres) J. & G								+	S.

* We are informed by Dr. Günther that the pharyngeals in *Ditrema temmincki* are of the normal type as in *Embiotoca*. *Ditrema* is therefore identical with *Phanerodon* Grd., and no character of importance distinguishes "*Phanerodon*" from *Embiotoca*. *Embiotoca argyrosoma* Grd., is identical with *Damalichthys vacca*.

† *Ephippus zonatus* Grd.

†† *Umbrina undulata* Steind., non Grd.

§ *Umbrina elongata* Gthr.

|| *Otolithus californiensis* Steind.

¶ *Otolithus magdalene* Steind.

** *Seriola mazatlanensis* Steind.

†† *Oreynus pacificus* Cooper.

‡ *Pelamys lineolata* Grd.

§§ *Chromitra concolor* Lock.; *Chromitra* Lock.=*Cybium* C. & V.=*Scomberomorus* Lac.

||| *Scomber diego* Ayres.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
193. <i>Mugil mexicanus</i> Steind.	+	+	+	+	+	+	+	+	S.
194. <i>Tylosurus exilis</i> (Grd.) J. & G.	+	+	+	+	+	+	+	+	S.
195. <i>Scomberesox brevirostris</i> Peters.	+	+	+	+	+	+	+	+	S.
196. <i>Hemirhamphus rosea</i> J. & G.	+	+	+	+	+	+	+	+	S.
197. <i>Exocoetus californicus</i> Cooper.	+	+	+	+	+	+	+	+	S.
198. <i>Cyprinodon californiensis</i> Grd.	+	+	+	+	+	+	+	+	S.
199. <i>Fundulus parvipinnis</i> Grd.	+	+	+	+	+	+	+	+	S.
200. <i>Myctophum procellarum</i> Bean Mss.	+	+	+	+	+	+	+	+	N.
201. <i>Myctophum crenulare</i> J. & G.	+	+	+	+	+	+	+	+	S.
202. <i>Synodus lucioceps</i> (Ayres) Gill.	+	+	+	+	+	+	+	+	S.
203. <i>Paralepis coruscus</i> J. & G.	+	+	+	+	+	+	+	+	N.
204. <i>Sudis ringens</i> J. & G.	+	+	+	+	+	+	+	+	S.
205. <i>Alepidosaurus borealis</i> Gill.	+	+	+	+	+	+	+	+	N.
206. <i>Osmerus thaleichthys</i> Ayres.	+	+	+	+	+	+	+	+	N.
207. <i>Osmerus attenuatus</i> Lock.	+	+	+	+	+	+	+	+	C.
208. <i>Hypomesus olidus</i> (Pallas) Gill.	+	+	+	+	+	+	+	+	N.
209. <i>Thaleichthys pacificus</i> (Rich.) Grd.	+	+	+	+	+	+	+	+	N.
210. <i>Salvelinus malma</i> * (Walb.) J. & G.	+	+	+	+	+	+	+	+	N.
211. <i>Salmo purpuratus</i> Pallas.	+	+	+	+	+	+	+	+	N.
212. <i>Salmo iridus</i> Gibbons.	+	+	+	+	+	+	+	+	C.
213. <i>Salmo gairdneri</i> Rich.	+	+	+	+	+	+	+	+	N.
214. <i>Oncorhynchus kennebeci</i> (Suckl.) Jor.	+	+	+	+	+	+	+	+	N.
215. <i>Oncorhynchus gorbuscha</i> (Walb.) Gill & Jor.	+	+	+	+	+	+	+	+	N.
216. <i>Oncorhynchus keta</i> † (Walb.) Gill & Jor.	+	+	+	+	+	+	+	+	N.
217. <i>Oncorhynchus kisutch</i> (Walb.) J. & G.	+	+	+	+	+	+	+	+	N.
218. <i>Oncorhynchus tshawytscha</i> (Walb.) J. & G.	+	+	+	+	+	+	+	+	N.
219. <i>Oncorhynchus nerka</i> ‡ (Walb.) Gill & Jor.	+	+	+	+	+	+	+	+	N.
220. <i>Stolephorus ringens</i> (Jenyns) J. & G.	+	+	+	+	+	+	+	+	S.
221. <i>Stolephorus delicatissimus</i> (Grd.) J. & G.	+	+	+	+	+	+	+	+	S.
222. <i>Stolephorus compressus</i> (Grd.) J. & G.	+	+	+	+	+	+	+	+	S.
223. <i>Clupea sagax</i> Jenyns.	+	+	+	+	+	+	+	+	S.
224. <i>Clupea mirabilis</i> Grd.	+	+	+	+	+	+	+	+	N.
225. <i>Albula vulpes</i> (L.) Goode.	+	+	+	+	+	+	+	+	S.
226. <i>Nemichthys avocetta</i> J. & G.	+	+	+	+	+	+	+	+	N.
227. <i>Myrichthys tigrinus</i> Grd.	+	+	+	+	+	+	+	+	N.
228. <i>Ophichthys triserialis</i> (Kau) Gthr.	+	+	+	+	+	+	+	+	S.
229. <i>Muraena mordax</i> Ayres.	+	+	+	+	+	+	+	+	S.
230. <i>Acipenser transmontanus</i> † Rich.	+	+	+	+	+	+	+	+	N.
231. <i>Acipenser medirostris</i> ** Ayres.	+	+	+	+	+	+	+	+	N.
232. <i>Chimaera collieri</i> Bennett.	+	+	+	+	+	+	+	+	N.
233. <i>Manta birostris</i> † (Walb.) J. & G.	+	+	+	+	+	+	+	+	S.
234. <i>Myliobatis californicus</i> Gill.	+	+	+	+	+	+	+	+	S.
235. <i>Aetobatis laticeps</i> Gill.	+	+	+	+	+	+	+	+	S.
236. <i>Pteroplatea marmorata</i> Cooper.	+	+	+	+	+	+	+	+	S.
237. <i>Dasybatus dipterurus</i> J. & G.	+	+	+	+	+	+	+	+	S.
238. <i>Urolophus halleri</i> Cooper.	+	+	+	+	+	+	+	+	S.
239. <i>Raia binoculata</i> Grd. ‡.	+	+	+	+	+	+	+	+	N.
240. <i>Raia rhina</i> J. & G.	+	+	+	+	+	+	+	+	N.
241. <i>Raia inornata</i> J. & G. Mss.	+	+	+	+	+	+	+	+	C.
var. <i>inermis</i> J. & G. Mss.	+	+	+	+	+	+	+	+	C.
242. <i>Raia stellulata</i> J. & G.	+	+	+	+	+	+	+	+	C.

* *Salmo spectabilis* Grd.; *Salmo bairdi*, etc., Suckley; *Salmo callarias* Pallas.

† *Salmo scouleri* Rich., non Suckl.

‡ *Salmo sanguinolentus* Pallas; *Salmo tsuppitch* Rich.; *Salmo scouleri* Suckl.

§ *Salmo lycaodon* Pallas, non Gthr.; *Salmo paucidens* Rich.

¶ *Salmo lagocephalus* Pallas; *Salmo canis* Suckl.

‡ *Acipenser brachyrhynchus* et *acutirostris* Ayres.

** *Acipenser acutirostris* Gthr.

†† *Raia birostris* Walb.; *Manta americana* Bancroft; *Ceratoptera vampyrus* Auct.

‡‡ *Raia binoculata* Grd. = yg. of *Raia cooperi* Grd.

Name.	Puget Sound.	Columbia River.	San Francisco.	Monterey Bay.	San Luis Obispo.	Santa Barbara.	San Pedro.	San Diego.	Greatest abundance.
243. <i>Zapteryx exasperatus</i> J. & G.	.....	.....	.....	.....	.....	.....	.....	+	S.
244. <i>Rhinobatus triseriatus</i> J. & G.	.....	.....	+	.....	.....	+	+	+	S.
245. <i>Rhinobatus productus</i> Ayres	.....	.....	+	.....	+	+	+	+	S.
246. <i>Torpedo californica</i> Ayres	.....	.....	+	+	.....	.....	.....	.....	C.
247. <i>Squatina angelus</i> Dum.	.....	.....	+	+	.....	+	+	+	S.
248. <i>Somniosus microcephalus</i> (Bloch) Gill	+	.....	.....	.....	.....	.....	.....	.....	N.
249. <i>Squalus acanthias</i> L.	+	.....	+	+	.....	+	.....	.....	N.
250. <i>Heterodontus francisci</i> (Grd.) Gill.	.....	.....	.....	.....	.....	+	+	+	S.
251. <i>Notorhynchus maculatus</i> Ayres	.....	.....	+	+	.....	.....	.....	.....	C.
252. <i>Hexanchus corinus</i> J. & G.	+	.....	.....	+	.....	.....	.....	.....	C.
253. <i>Catulus ventriosus</i> * (Garman) J. & G.	.....	.....	.....	+	.....	+	+	.....	S.
254. <i>Mustelus hinnulus</i> (Blainv.) J. & G.	.....	.....	+	+	.....	+	+	+	S.
255. <i>Rhinotriacis henlei</i> Gill	.....	.....	+	+	.....	.....	.....	.....	C.
256. <i>Triacis semifasciatus</i> Grd.	.....	.....	+	+	.....	+	+	+	C.
257. <i>Galeorhinus galeus</i> (L.) Blainv.	.....	.....	+	+	.....	+	+	+	S.
258. <i>Galeocerdo tigrinus</i> M. & H.	.....	.....	.....	.....	.....	.....	.....	.....	S.
259. <i>Carcharinus glaucus</i> (L.) Blainv.	+	.....	+	.....	.....	.....	.....	.....	C.
260. <i>Eulamia lamia</i> (Risso) Gill.	.....	.....	.....	.....	.....	.....	+	.....	S.
261. <i>Sphyrna zygaena</i> (L.) Raf.	.....	.....	.....	.....	.....	.....	.....	.....	S.
262. <i>Cetorhinus maximus</i> (L.) Blainv.	.....	.....	.....	+	.....	.....	.....	.....	C.
263. <i>Carcharodon carcharias</i> † (L.) J. & G.	.....	.....	.....	+	.....	.....	.....	.....	S.
264. <i>Isurus oxyrinchus</i> Raf.	.....	.....	.....	.....	.....	.....	+	.....	S.
265. <i>Lamna cornubica</i> (Gmel.) Flem.	.....	.....	.....	+	.....	.....	.....	.....	C.
266. <i>Alopias vulpes</i> (Gmel.) Bon.	.....	.....	.....	+	.....	.....	.....	.....	C.
267. <i>Entosphenus tridentatus</i> (Rich.) Gill	.....	+	.....	+	.....	.....	.....	.....	N.
268. <i>Ammocætes plumbeus</i> (Ayres) J. & G.	+	.....	+	.....	.....	.....	.....	.....	N.
269. <i>Polistotrema dombeyi</i> ‡ (Muller) Gill.	.....	.....	+	+	.....	.....	.....	.....	S.
270. <i>Branchiostoma lanceolatum</i> (Pallas) Gray	.....	.....	.....	.....	.....	.....	.....	.....	S.
Totals	90	14	145	148	43	99	80	83	

Species most abundant northward (Alaskan fauna)	96
Species most abundant centrally (Californian fauna)	76
Species most abundant southward (Lower Californian fauna)	98

Total	270
Species found also in Atlantic Ocean	23
Species not obtained by the Commission	15
Species not recorded by previous writers	66

* *Cephaloscyllium laticeps* J. & G., probably not of Duméril.

† *Carcharodon rondeleti* M. & H.

‡ *Bdellostoma polytrema* Grd.; *Bdellostoma stouti* Lock.

INDIANA STATE UNIVERSITY,
Bloomington, November 30, 1880.